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ABSTRACT

Materials to use in geography instruction and ways to evaluate student learning in geography are described. Portfolios are a good way to determine whether students have achieved the desired objectives in geography. Portfolios also require that the student be involved in both learning and assessment. For learning to use maps and globes, student portfolios may include projects such as student-constructed relief and flat maps, student-made globes, and other types of reports, including cassette recordings. The five fundamental themes teachers should emphasize in teaching geography are absolute and relative location, physical place, human and environmental systems, movement, and regions of the world. Each of these may be developed into a set of objectives students should master, and these objectives, samples of which are given, can be defined as general objectives or behaviorally stated objectives. Bringing technology into the geography curriculum assists students in achieving objectives more readily and in depth. (Contains 16 references.) (SLD)

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Portfolios, Evaluation, Maps and Globes in Geography

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PORTFOLIOS, EVALUATION, MAPS AND GLOBES IN GEOGRAPHY

In a changing world, it is very important for all to be highly informed about how borders and boundaries are being modified in different nations on the planet earth. Differences in these land marks change rapidly due to invasions between selected countries. They change also due to agreements that are in evidence between and among nations, hopefully to make for peace among the involved peoples. Alliances are formed involving diverse nations so that protection from enemy countries might be there. These alliances might be broken due to disagreements. Trade treaties are signed and modified and/or broken. New nations arise. Sometimes, when listening to the news, one has not heard of a nation that has endured for some time and yet it can readily be located on a map and globe.

I believe all humans should possess an updated set of maps and a large globe for the family to study and identify places mentioned on the news. these learnings would assist pupils much to become avid fans of geography. Geography might then become more alive to pupils. A stimulating family type of informal learning night accrue here. Closeness among family members is very important in developing feelings of belonging, a basic need of all human beings. Within the family setting, pupils might also have their recognition needs met through such activities as locating places on maps and globes (Ediger, 1993, 119-121).

Portfolios are a good way to notice if pupils have achieved relevant goals in geography. Portfolios are also an excellent procedure to use as learning opportunities to notice if these objectives have been achieved in an ongoing lesson/unit of study. Thus, the objectives provide guidance in terms of what pupils are to learn. The learning opportunities, including portfolio development, need to be aligned with the stated objectives. The portfolio, in part, indicates learner achievement and progress in reaching the objectives. Maps and globes

are at the heart of learning in the geography curriculum. The major focus here will be upon map and globe learning in the social science discipline of geography with a portfolio emphasis Ediger, 1997, 111-115).

Maps, Globes, as Related to Portfolio Development

Portfolios indicate representative school work of pupil experiences in the curriculum. What becomes a part of the portfolio here emphasizes daily work of a pupil in units on geography, as a separate subject, or within the social studies, stressing additional social science disciplines taught as being related (Ediger, 1996, 17-20).

The pupil has much input in terms of what goes into a portfolio. A pupil centered curriculum is then in evidence. The pupil is to do the learning, not the teacher nor the school administrator per se. Teachers are guides to stimulate and encourage pupil involvement in portfolio development. Items in a portfolio then represent learning activities in every day classroom settings, involving teaching and learning. It is the pupil who needs to experience quality sequence here. A psychological rather than a logical sequence is then in evidence since the pupil is heavily involved in perceiving order in portfolio development in the geography curriculum (Ediger, 1995, 8). Thus, the pupil is definitely involved in ordering his/her own experiences in learning opportunities involving portfolio development.

For map and globe learnings, what might become a part of the portfolio for a pupil? The following are examples of several classrooms, I observed in student teaching supervision:

1. making a relief map from an equal mixture of flour and salt with enough water added to make for a thick paste. This mixture was placed on a piece of plywood, three feet by four feet in dimension. Among others, the following geographical features were indicated in relief form: the Jordan River, the Sea of Galilee, the Dead Sea, the Judean Hills, Mount Carmel, the Mediterranean Sea, and the Plains of Esdraelan.

Tempera paint was used to color the different elevation levels as indicated on a legend. A committee of four members collaboratively completed this project. Pupils are seemingly more aware of elevation after forming the above in relief features. A snapshot was placed into the portfolio of each pupil involved in making the relief map (Ediger, 1990, 31-36).

2. A different committee of three pupils planned and developed a flat projection map of the Middle East, taught as a unit of study.The configurations of nations studied were drawn on the map. The model used for drawing the different nations was a smaller map from the basal textbook used in the classroom. Nations drawn for the flat projection were Egypt, Israel, Palestine, Jordan, Syria, Lebanon, Saudi Arabia, Iraq, Iran, and Turkey. Each labeled nation drawn had a different color to make for distinction and for an attractive map. Pupils apparently remembered these nations better due to having paid close attention to each when making the drawing. A photocopied, completed map was placed into each portfolio of those involved in doing the project (Ediger, 1995, 8-11).

3. a globe was made from a round balloon, covered with paper mache.' The paper mache' came from strips of newspaper, one inch wide by six inches long, approximately. The strips of paper were soaked in water for four hours. A paste was made from a mixture of flour and water. The strips of soaked paper were placed into the paste before being put onto the round balloon. After the paper mache' had dried, they were colored with diverse colors of tempera paint, showing the different continents on the planet earth. By making and doing, pupils are using kinesthetic means of learning, along with problem solving skills, to complete a model globe with the continents thereon (Ediger, 1998, 23-27).

4. a cassette recording, containing content from a variety of reference sources, (Ediger, 1996, 89-94) was made by a pupil in reporting orally about agricultural crops grown in the Middle East. The report indicated produce such as figs, dates, pomegranates, bananas,

and cusa, as well as common vegetables/fruit grown including tomatoes, potatoes, egg plant, okra, onions, oranges, grapefruit, lemons, and lettuce. Content on diseases and problems of growing these plants was also a part of the cassette report. The cassette became a part of the individual pupil's portfolio.

5. a written report was developed by a learner on the Mediterranean climate of the Middle East (Ediger, 1998, The Holy Land). The report based on using a variety of materials, including internet and a CD ROM, gave accurate information on rainfall amounts during different seasons of the year, temperature readings, and how these factors influence productivity of farm produce. A summary of the report was photocopied for classroom discussions. Direct reference was made to a map and globe on the Middle East as the rainfall and temperature readings were discussed. Pupils were amazed to learn that, generally, rainfalls only during the months from October to April and no rain falls during the other months of the calendar year. The written paper was appraised using rubrics in determining quality and became a part of the learner's portfolio.

6. three pupils in a committee developed an outline on manufacturing in the Middle East (Ediger, 1994,27-28). Reference sources for the outline were listed in the bibliography section. Proper style for the sentence outline and the bibliography was emphasized in the written product. The outline scope of manufacturing included the following major cities--Jerusalem, Israel and the occupied areas; Amman, Jordan; Damascus, Syria; Beirut, Lebanon; Ankara, Turkey; Cairo, Egypt; Baghdad, Iraq; and Teheran, Iran. Each city and nation was pinpointed on a map and a globe as the classroom discussion proceeded from the outline on manufacturing in the Middle East. Pupils were highly interested in the class when discussing content on how the civil war (1975-1990) had affected industry in Lebanon, as well as how massive air strikes in the 1991 Desert Storm War had negative affects on Iraqi industry and later with an oil/trade embargo. With critical and creative thinking, pupils wondered how fair the trade and oil embargoes,

United Nations rulings, were for people in Iraq. The outlines were placed in each of the three involved pupils' portfolios.

7. a chart (Ediger, 1996, 222-225) was was completed by three pupils showing the population of each nation in the Middle East. The name of the nation together with the corresponding population was listed. The completed chart was taped to the classroom wall with a globe nearby and adjacent. Yarn of different colors was used to connect each nation on the chart with its location on the globe. From the chart and the globe, the three pupils lead the class in drawing relevant generalizations as to why populations might exist in their respective geographical regions.

8. food products pertaining to the Middle East area of the world were purchased and brought into the classroom by the teacher and the student teacher, whom I supervised in the public schools. A committee of three pupils read the labels on the packages/containers and located the listed places of origin on cardboard (Ediger, 1998, 59). The places of origin of these food items were then connected with yarn to their respective positions on a large map of the Middle East. A neat display resulted in that the food items were placed on a table and connected with the colored yarn to were these were packaged on the map. This learning activity resulted in many pupils looking at the food items and their place of origin on a map. Many questions arose as to how the packaged food was to be prepared. The cooperating teacher and the student teacher prepared a rice dish together with a topping of diced chicken from a package/container. Pupils were eager to try the food dish and found it to be interesting and delicious. Hot tea was served as a beverage. Pupils learned that bedouin nomads living in the Middle East eat rice with their hands. Pupils tried this and found it difficult to eat without knives and spoons. The writer assisted in developing the unit being taught on the Middle East; he taught for two years and has made four return trips to that area of the world. He also has eaten together with bedouins in a tent setting.

Five Fundamental Themes in Geography

The Geographic Education Standards Project (1997) identified Five fundamental Themes for teachers to emphasize in teaching geography. These are location, place, human-environmental system, movement, and regions.

1. location. Absolute location such as using grids (latitude and longitude), different types of maps and globes (thematic maps show population, economic systems, climate zones, political divisions, and settlement patterns), map projections (to change from a spherical earth to a two dimensional map sheet), as well as earth-sun relations (to determine climate, seasons, and time zones). Relative location includes geographical explanations as well as how a location can change with history.

2. place. Physical characteristics (land forms, climate, soils, natural vegetation and animal life). Physical characteristics differ from place to place and affect human beings in terms of crops grown, sorts of homes, towns and cities developed. Human characteristics including religion, languages, population factors, settlement patterns, and economic activities. Within a given place, human beings develop cultures that differ in degrees from other cultures.

3. human-environmental system. These include interrelationships between humans and environments, the role of technology (humans apply technology to modify environments, problems of technology (air and water pollution, waste disposal, and toxic materials, environmental hazards (natural-earthquakes, hurricanes, floods, volcanoes; human induced-- nuclear disasters, oil spills, and heat pollution of water bodies), environmental limits (water, land, and natural resources), and adaptations (influence of the environment in making a living, house types, ways of life, and the appearance of the human landscape). Ethics and values issues relating to management and protection of environmental resources as well as different cultural attitudes about the environment and its resources.

4. movement. Transportation modes, movement in every day life, history of movement, economic stimulus for movements, as well as energy and mass induced movements (weather, wind, ocean currents, folding and faulting, and landslides). Global interdependence include movement of goods, services, ideas, and foreign trade. Interactions occur between and among regions, states, and nations.

5. regions. Uniform regions defined by cultural or physical characteristics ((See Boehm and Peterson, 1994).

The above enumerated items might well provide a quality basis in determining objectives pertaining to teaching about maps and globes. Objectives need to be relevant, salient, and important for learners to achieve. They provide direction to the teacher in teaching pupils. Leaning activities may then be chosen by the teacher to assist students to attain these objectives. Ultimately, evaluation procedures selected may determine how well students achieved the stated objectives. Ample opportunities need to be given students to identify and solve problems involving the use of maps and globes The Five Fundamental Themes in geography developed by the National Council for Geographic Education are important for teachers to use in planning and teaching so that pupils might achieve relevant concepts and generalizations. Each concept listed above may be used as an objective in map and globe study for pupils, such as number one -- place--in that learners may locate specific places including the capitol city of Jordan by using latitude and longitude degrees in the grid to locate Amman.

Major Generalizations for Pupils to Achieve

I have identified what I believe are major generalizations pupils should achieve pertaining to maps and globes in geography; these are the following:

1. Pupils should realize that distances can be computed by using the scale of miles given on the map or globe.

2. Specific places on the Earth can be located using the concepts of "latitude" and "longitude."

3. North latitude refers to distance in degrees north of the Equator while south latitude refers to distance in degrees south of the Equator.

4. East longitude refers to distances in degrees east of the Prime Meridian while west longitude refers to distance in degrees west of the Prime Meridian.

5. Distances north or south of the Equator are measured along a meridian whereas distances east or west of the Prime Meridian are measured along a parallel.

6. The earth rotates from a west to east direction once every twenty-four hours (causes for day and night may be shown by using a flashlight , a darkened room, and a globe that represents the planet earth). The imaginary line on which the earth rotates is called its axis.

7. The earth revolves around the sun, approximately once in 365 and 1/4 days. On March 21 and September 21, approximately, the sun is directly overhead at noon on the Equator. Whereas on June 21, approximately, the sun is directly overhead at noon on the Tropic of Cancer, located 23 and 1/2 degrees north of the Equator. On December 21, the sun is directly overhead at noon on the Tropic of Capricorn, 23 and 1/2 degrees south of the Equator. Other factors involved in determining temperature readings include elevation of land being considered, ocean currents, and nearness to bodies of water.

8. The axis of the earth points toward the North Star. On a bright and sunny day at noon, each student can look directly at his/her shadow; he/she is facing north at this time. Pupils facing north may be shown the position of the North Star as it would be at night.

9. Maps do not represent as accurately the surface of the earth as

compared to globes. With the use of maps, however, a certain continent, country, or area can be studied more conveniently than a globe since it will represent a larger area.

10. Some of the symbols used on maps and globes are standard symbols, generally. For example, maps represent hospitals, railroad tracks, and paved roads with standard symbols. There are also symbols which vary in meaning from legend to legend in different maps and globes used.

11. Any circle has 360 degrees. there are 24 time zones on the Earth, thus making each time zone have an approximate value of 15 degrees of longitude.

12. A hemisphere is represented by half of the Earth; four hemispheres may be referred to-- southern, northern, eastern, and western.

13. The direction of north on a map pertains to going directly to the North Pole; whereas the direction of south means to go directly to the South Pole. There are different projections projections of maps so the direction of north may not always be "up" on the map.

14. Low, middle, and high latitudes refer to specific areas or parts of maps and globes, such as the low latitudes lying immediately north and south of the Equator, while the high latitudes are located around the North and South Poles. The middle latitudes refer to those parts lying between the low latitudes and the high latitudes (Ediger,1998, 143-144).

Each of the above named generalizations may be stated as a general objective or as a behaviorally stated objective. Learning opportunities may then be provided so that pupils may achieve the objective. Maps and globes may be taught as a separate unit of study or they may be integrated with other thematic units of study. In all units of study, pupils need to learn how to use maps and globes in relationship to any happening or event occurring in a geographical region. Social studies teachers need to choose what is important for pupils to learn in the area of maps and globes (see Joint Committee on Geographic

Education, 1984). I recommend content on maps and globes be taught a a part of thematic units of study so that content is perceived as being related. However, there is also much merit in in stressing separate units of study on maps and globes. Depth learning, rather than survey approaches, can be emphasized more so in separate units of study on maps and globes. I have observed both approaches being used successful by student teachers/cooperating teachers in the public schools. Both approaches can make for interest, meaning, and purpose on the pupil's part in learning. Stimulating learning opportunities need to be in the offing so that pupils may achieve each objective. Learners should be actively involved in learning with goal centered activities and experiences. Learners should not be passive individuals, but rather be thoroughly involved with the objectives, learning opportunities, and appraisal procedures. Technology needs to be brought into the geography curriculum as it assists pupils to achieve objectives more readily and in depth (Ediger, 1997, 1-17).

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